

PORTABLE APPARATUS HAVING EJECTOR FOR EJECTING A UNIT STORED IN THE RECEPTACLE

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BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates to a portable electronic apparatus such as a portable computer of book-type, and particularly, to a structure for allowing a battery pack or a CD-ROM drive device to be detachably contained in a casing of the electronic apparatus.

2. Description of the Related Art

In recent years, various portable computers have been provided which are easy to bring about and attain high functional performance. This kind of computers have a box-like casing with a keyboard. The casing internally contains various functional components such as a hard-disc drive device, a floppy disc drive device, and the likes.

This kind of computer comprises a battery pack which functions as a drive power source so that the it can be used where a commercial alternating current power source is not available. The battery pack is detachably supported in the casing of the computer. This battery pack is detached from the casing at a relatively high frequency, in comparison with the functional components such as the hard-disc drive device and the floppy disc drive device. In this respect, there has been a know computer in which a battery receptacle for containing the battery pack is formed at a bottom portion of the casing. This battery receptacle is open in the bottom wall of the casing or in front and side walls continuously extending from the bottom wall, so that the battery pack can easily be attached there to or detached therefrom, without disassembling the casing.

However, in a computer whose battery receptacle is open in the bottom wall of the casing, a heavy and large battery pack is installed and pulled out through the bottom side of the casing. Therefore, when the battery pack is installed into and extracted from the battery receptacle, the battery pack cannot be supported by the casing, and may unintentionally fall therefrom. Then, the battery pack falls down on the ground or floor, causing such an impact which damages the battery pack.

As a manner of solving this problem, it has been considered that the casing is place up side down to make the bottom wall of the casing face upwardly, when the battery pack is pulled out of the battery receptacle. In this manner, since the battery receptacle is open upwardly, the heavy battery pack can be supported from the lower side by the casing, and the heavy battery pack can be prevented from falling unintentionally.

However, in this manner, when the battery pack is pulled out of the battery receptacle, it is necessary for a user to carry out a troublesome service that a user must hook his or her finger on the heavy battery pack and pull up the pack. Thus, detachment of the battery pack causes a difficulty.

On the other hand, down-sizing of the casing has been promoted with respect to a computer in recent days, in order to improve its portability. Therefore, a number of functional components including the battery pack, the hard-disc drive device, the floppy disc drive device, and the likes are

arranged in the casing at a high density. These functional components are each packaged in modules each having a specialized function. Further, these functional components are detachably supported in the casing, so that they can be respectively replaced with components of higher abilities.

However, in several kinds of computers, a plurality of functional components must be layered on each other in the thickness direction, in view of the internal space of the casing. If the functional components are thus layered on each other, a plurality of opening portions for inserting and exerting the functional components must be formed in the bottom and side walls of the casing, and therefore, the shape of the casing is complicated. In addition, covers are required for respectively covering the opening portions of the casing, and the components of the casing are increased in number by the covers thus added. Therefore, manufacturing costs are increased, and as a result, the price of the computer is increased.

SUMMARY OF THE INVENTION

The present invention has a first object of providing a portable type electronic apparatus which prevents a functional component from unintentionally falling when a functional component such as a battery pack is detached from a casing, and which facilitates a service for pulling out the functional component.

The present invention has a second object of providing a portable type electronic apparatus in which first and second functional components arranged on each other can be inserted into and extracted from a pack receptacle through one single opening portion and which thus simplifies the structure of the casing.

In order to achieve the first object, the portable electronic apparatus according to the present invention comprises: a casing having a box-like shape and a peripheral wall; a pack receptacle defined within the casing, said pack receptacle having an opening portion open in the peripheral wall; a packaged functional component, stored in the pack receptacle such that the packaged functional component can be detached through the opening portion; locking means positioned in the pack receptacle, for holding the functional component in the pack receptacle, said locking means being movable by manual operation between a locked position where the locking means is hooked on the functional component and a lock-released position where the locking means leaves the functional component; pressure means provided in the pack receptacle, for energizing the functional component in a direction in which the functional component is pushed out of the opening portion; and a cover detachably supported on the casing, for covering the opening portion and the locking means.

In this structure, when the functional component is detached from the pack receptacle, the cover is detached from the casing, at first, thereby to expose the locking means and the opening portion. In this state, the functional component is still held in the casing by the locking means, and therefore, the functional component does not fall from the pack receptacle.

In the next, the locking means is operated to move from the locked position to the lock-released position, thereby to make the locking means leave the functional component. The locking of the functional component is thereby released. Since the functional component is pressed against the opening portion by the pressure means, and therefore, the functional component is pushed out of the opening portion when the locking of the functional component is released by the